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LETTER TO THE EDITOR

Mental Retardation in Children in Relation to Their Mothers' Employment During Pregnancy

Key words: mental retardation, occupational hazards, maternal exposures

In their article on mental retardation in the November 1993 issue of this journal Decouflé et al. [1993] carefully express that "to their knowledge, childhood mental retardation has not been systematically examined in relation to the occupational history of either parent." Apparently, they were not aware of a case-control study performed in The Netherlands in the same period (1985 through 1991), which was partly published recently [Roeleveld et al., 1993; Roeleveld et al., unpublished material]. In this study, 306 children with mental retardation (mean age at interview 10.6 years) were compared to 362 control children. The study differs in several aspects from the work of Decouflé et al. [1993], i.e. the control group consisted of children with other congenital handicaps in order to avoid information bias [Roeleveld et al., 1990], the cases were restricted to children with an unknown etiology of mental retardation, all cases and controls were clinically diagnosed in specialized hospitals, and for data collection and analysis several time-windows during the pregnancy period were used.

In contrast to Decouflé et al. [1993] we found several indications for an effect of occupational exposure, such as significantly increased odds ratios (ORs) for health care workers, teachers, check-out clerks, and hairdressers, and for exposure to copying machines, mercury, paint and dyes, alcohol, and dust. In agreement with the study in Atlanta, we found an elevated OR for women in the textile industry.

There are several possible explanations for the lack of positive findings in the study of Decouflé et al. [1993]. Ascertainment of cases through public schools may have led to dilution of the case series by non mentally retarded children with a bad performance on the IQ test [Kiely, 1987]. Also, there are numerous indications that mild mental retardation in this population is associated with an unfavorable socio-economic environment (young and unemployed mothers with low education). Further bias towards unity may be caused by inclusion of cases with a known etiology in the study.

Missed associations may also be due to the definition of exposure status, as Decouflé did not distinguish between preconceptional exposure and exposure in early

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Accepted for publication April 8, 1994.

or late pregnancy. In our study, on the other hand, we used different time-windows according to the stages of brain development and observed the strongest associations between mental retardation and occupational exposure in late pregnancy, whereas the ORs in the periconceptional time-windows varied around unity.

Although the large differences in race and education between case and control mothers call for controlling for confounding, overadjustment may have obscured the results if these differences in socioeconomic status were caused by the distribution of occupations among cases and controls associated with mental retardation. Overadjustment can be particularly strong in ORs calculated with selected occupations as referent group. On the other hand, Decouflé et al. [1993] did not control for maternal alcohol use, whereas we found a statistically significant association between mental retardation and moderate alcohol consumption once or twice per week [Roeleveld et al., 1992].

Although the results of these two studies are inconsistent in many aspects possibly due to methodological differences, they do call for more in depth studies on the risk of mental retardation in offspring related to specific parental occupations. Recently, we started a cohort study to evaluate the functional development of children born to women who worked as hairdressers during the course of pregnancy.

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